



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,016	03/02/2004	Nobuhiko Akasaka	1081.1191	3571
21171	7590	04/30/2008		
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EXAMINER YANCHUS III, PAUL B	
			ART UNIT 2116	PAPER NUMBER
			MAIL DATE 04/30/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/790,016

Applicant(s)

AKASAKA, NOBUHIKO

Examiner

PAUL B. YANCHUS III

Art Unit

2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 8-10 is/are allowed.
- 6) ☒ Claim(s) 1, 3-7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This final office action is in response to amendments filed on 1/23/08.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art [AAPA], in view of Kurd, US Patent no. 6,266,779.

Regarding claim 1, AAPA discloses a microcontroller operating in synchronization with a clock, comprising:

an arithmetic unit operating in synchronization with the clock [page 1, lines 18-21]; and
an internal resource being connected to the arithmetic unit via a bus, and having at least a bus interface and an internal circuit, both of which operate in synchronization with the clock [page 2, lines 7-26].

AAPA does not disclose a system resource prescaler which generates, from the clock, an operation permission signal denoting an operation permission state in m cycles out of n cycles of the clock ($m \leq n$), and supplies the operation permission signal to the internal circuit of the internal resource, wherein the internal circuit operates in synchronization with the clock when the operation permission signal denotes the operation permission state. Kurd discloses a system resource prescaler [clock enable generator] which generates, from a clock, an operation

permission signal [clock enable signal] denoting an operation permission state in m cycles out of n cycles of the clock [ratio], and supplies the operation permission signal to an internal circuit of an internal resource, wherein the internal circuit operates in synchronization with the clock when the operation permission signal denotes the operation permission state [Figure 1 and column 3, lines 35-38]. It would have been obvious to one of ordinary skill in the art to add the Kurd clock enable generator into the AAPA microcontroller to facilitate data transmission between resources which operate at different clock frequencies [Kurd, column 1, lines 38-49].

Regarding claim 3, AAPA further discloses that the internal resource includes a communication macro controlling communication with outside, and an internal circuit of the communication macro includes a counter which generates a communication control clock [page 2, lines 10-18].

Regarding claim 4, AAPA further discloses that the internal resource comprises a pulse generation macro generating a control pulse, and an internal circuit of the pulse generation macro comprises a counter controlling a generation timing of the control pulse [page 2, lines 7-18].

Regarding claim 5, Kurd discloses that the clock enable generator is programmable to support a plurality of desired ratios [column 3, lines 25-38]. It is inherent that some type of register would be used to store the desired ratio.

Regarding claim 6, Kurd, as described above, discloses that the desired clock ratio of the clock enable generator is programmable. It would have been obvious to one of ordinary skill in the art that the ratio may be set to 1 to output an enable signal for every clock cycle.

Regarding claim 7, Kurd discloses that the clock enable generator dispersively allocates the m cycles throughout the n cycles [column 3, lines 25-38].

Regarding claim 11, AAPA discloses a microcontroller operating in synchronization with a clock, comprising:

an arithmetic unit operating in synchronization with the clock [page 1, lines 18-21]; and

an internal resource being connected to the arithmetic unit via a bus, and having at least a bus interface and an internal circuit, both of which operate in synchronization with the clock [page 2, lines 7-26].

AAPA does not disclose a system resource prescaler which generates, from the clock, an operation permission signal denoting an operation permission state in m cycles out of n cycles of the clock ($m \leq n$), and supplies the operation permission signal to the internal circuit of the internal resource, wherein the internal circuit operates in synchronization with the clock when the operation permission signal denotes the operation permission state. Kurd discloses a system resource prescaler [clock enable generator] which generates, from a clock, an operation permission signal [clock enable signal] denoting an operation permission state in m cycles out of n cycles of the clock [ratio], and supplies the operation permission signal to an internal circuit of an internal resource, wherein the internal circuit operates in synchronization with the clock when the operation permission signal denotes the operation permission state [Figure 1 and column 3, lines 35-38]. It would have been obvious to one of ordinary skill in the art to add the Kurd clock enable generator into the AAPA microcontroller to facilitate data transmission between resources which operate at different clock frequencies [Kurd, column 1, lines 38-49].

Regarding claim 12, Kurd further discloses that the operation permission signal is controlled to be set to the operation permission state on a cycle-by-cycle basis of the clock [column 3, lines 25-38].

Regarding claim 13, Kurd further discloses that the operation permission signal is set to the operation permission state in m cycles out of n cycles of the clock, and the values n and m can be set alterably [column 3, lines 25-38].

Allowable Subject Matter

Claims 8-10 are allowed.

Response to Arguments

Applicant's arguments filed 1/23/08 have been fully considered but they are not persuasive.

Regarding claims 1, 3-7 and 11-13, Applicant argues that bus clock macros in Kurd do not connect to the arithmetic unit via a bus and because of that it would not have been obvious to one of ordinary skill in the art to combine AAPA and Kurd. Examiner disagrees. Kurd is not relied on to disclose an arithmetic unit connected to bus macros via a bus. Kurd is relied on to disclose a system resource prescaler [clock enable generator] which generates, from a clock, an operation permission signal [clock enable signal] denoting an operation permission state in m cycles out of n cycles of the clock [ratio], and supplies the operation permission signal to an internal circuit of an internal resource, wherein the internal circuit operates in synchronization with the clock when the operation permission signal denotes the operation permission state [Figure 1 and column 3, lines 35-38]. The relied on disclosure of the Kurd reference functions to operate a circuit at only certain clock cycles and not operate the circuit at other clock cycles. This enables different speed devices to function in synchronization with the same clock even

though they have different operating speeds. As described in the above rejection, AAPA discloses all other limitations of the claims. Therefore, the combination of AAPA and Kurd does disclose all limitations of claims 1, 3-7 and 11-13.

The rejections to claims 1, 3-7 and 11-13 are respectfully maintained.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL B. YANCHUS III whose telephone number is (571)272-3678. The examiner can normally be reached on Mon-Thurs 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on (571) 272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Yanchus
April 23, 2008
/Rehana Perveen/
Supervisory Patent Examiner, Art Unit 2116